

LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P517876

Luminaire Tested: HVL8-2-LD4-1HI-40-UNV-C-EDD

Issue Date: 4/27/2021

Tested By:

Approved By:



NVLAP Lab Code: 200050-0

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Test Information

Test Method: LM-79-2019
Report Number: P517876
Test Lab: INNOVATION CENTER
Issue Date: 4/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: FAIL-SAFE
Catalog Number: HVL8-2-LD4-1HI-40-UNV-C-EDD
Description: 2 FOOT, 8 INCH WIDE, HVL LED LUMINAIRE, WITH 4000K, 80 CRI LEDS
Light Source: -
Ballast/Driver: -

Summary

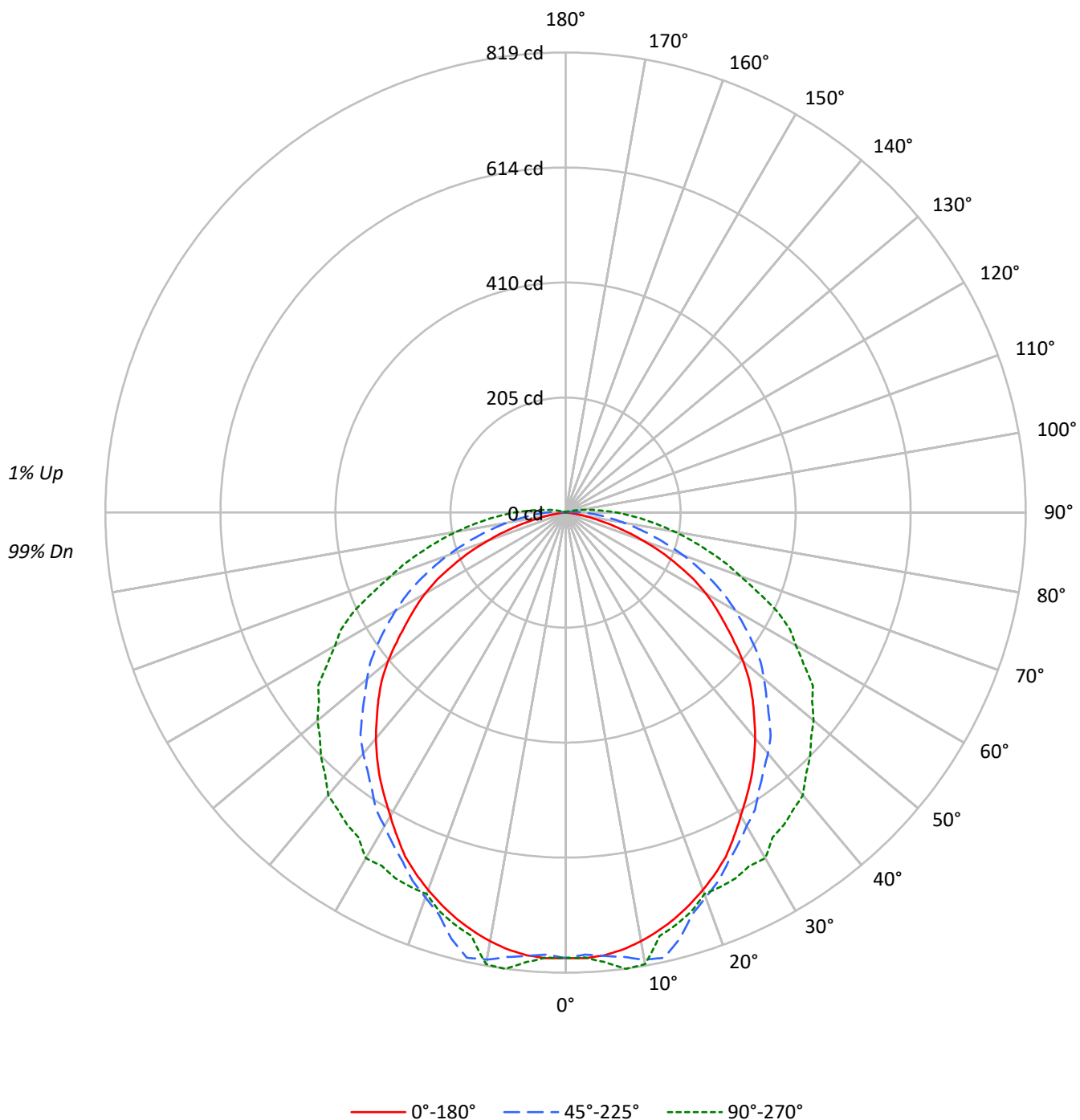
Lumens per Lamp: N/A
Luminaire Lumens: 2389.0 lumens
Efficiency: N/A
Efficacy: 111.1 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.32 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.67' x L: 2' x H: 0.17')
CIE Type: Direct

Input Watts (W): 21.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	P3	10/30/2015	4/30/2016
Power Meter	IN0214	1/12/2016	1/12/2017
AC Power Source	IN0062	1/12/2016	1/12/2017
DC Power Supply	--	--	--
Room Thermometer	IN0145	1/13/2016	1/13/2017

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Luminous Intensity Polar Plot



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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20					20					20					20
RC	80				70					50					30					10
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	110	110	110	105	105	105	101	101	101			99
1	108	103	98	94	105	100	96	92	96	92	89	91	89	86	87	85	83			81
2	98	89	82	76	95	87	80	75	83	78	73	80	75	71	76	72	69			67
3	89	78	69	63	86	76	68	62	73	66	61	70	64	59	67	62	58			56
4	81	69	60	53	79	67	59	52	65	57	51	62	56	51	60	54	50			47
5	75	61	52	45	72	60	51	45	58	50	44	56	49	44	54	48	43			41
6	69	55	46	40	67	54	46	39	52	45	39	50	44	38	49	43	38			36
7	64	50	41	35	62	49	41	35	47	40	34	46	39	34	44	38	34			32
8	59	46	37	31	58	45	37	31	43	36	31	42	35	30	41	35	30			28
9	55	42	34	28	54	41	33	28	40	33	28	39	32	27	38	32	27			25
10	52	39	31	25	51	38	30	25	37	30	25	36	29	25	35	29	25			23

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	6402	6402	6402
5°	6364	6290	6371
10°	6258	6359	6410
15°	6122	6172	5950
20°	5960	5767	5690
25°	5791	5504	5725
30°	5547	5289	5788
35°	5365	5085	5686
40°	5171	4928	5721
45°	4963	4729	5619
50°	4714	4522	5575
55°	4362	4300	5572
60°	4080	4002	5335
65°	3557	3650	5164
70°	2848	3200	4631
75°	1975	2661	4227
80°	1054	2121	3795
85°	351	1567	3344

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 45°

Luminance: 5619 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	76.2	3.2
10°-20°	217.0	9.1
20°-30°	323.0	13.5
30°-40°	388.2	16.2
40°-50°	408.6	17.1
50°-60°	379.1	15.9
60°-70°	299.8	12.5
70°-80°	183.1	7.7
80°-90°	79.8	3.3
90°-100°	24.8	1.0
100°-110°	5.6	0.2
110°-120°	2.2	0.1
120°-130°	1.3	0.1
130°-140°	0.3	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	616.2	25.8
0°-40°	1004.4	42.0
0°-60°	1792.1	75.0
0°-90°	2354.7	98.6
90°-120°	32.7	1.4
90°-150°	34.3	1.4
90°-180°	34.0	1.4
0°-180°	2389.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	793	793	793	793	793	
5°	791	790	792	801	803	75
15°	749	778	785	759	760	211
25°	675	718	686	706	718	310
35°	576	592	601	656	678	360
45°	471	473	512	593	615	363
55°	347	352	408	498	537	312
65°	220	226	288	381	415	217
75°	83	110	160	246	262	91
85°	7	26	62	121	139	11
90°	0	8	33	77	91	0
95°	0	2	14	42	52	0
105°	0	1	3	8	12	0
115°	0	1	2	4	4	0
125°	0	0	1	2	3	0
135°	0	0	0	1	1	0
145°	0	0	0	0	0	0
155°	0	0	0	0	0	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0

TEST NUMBER: P517876

CATALOG NUMBER: HVL8-2-LD4-1HI-40-UNV-C-EDD

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	793.0	793.0	793.0	793.0	793.0
2.5°	794.0	791.9	787.5	791.7	792.9
5°	791.1	789.5	792.2	801.1	803.4
7.5°	784.5	790.6	797.9	814.0	819.2
10°	774.6	786.2	808.0	821.8	816.4
12.5°	762.6	782.4	811.6	784.8	772.3
15°	748.8	777.5	785.1	759.1	759.6
17.5°	732.4	773.5	750.0	749.4	744.7
20°	714.8	759.9	728.9	727.6	722.6
22.5°	695.9	742.0	710.1	707.6	721.1
25°	675.4	718.5	685.8	706.3	717.7
27.5°	649.7	687.9	665.4	694.5	708.9
30°	623.7	656.2	644.6	685.1	710.6
32.5°	599.3	623.1	627.4	681.6	685.8
35°	576.2	592.2	601.1	655.7	678.0
37.5°	550.9	555.2	578.8	644.9	666.4
40°	525.0	522.3	560.1	627.1	656.8
42.5°	497.2	496.3	540.2	618.2	633.1
45°	470.9	473.0	511.9	593.0	615.2
47.5°	443.9	446.7	485.1	565.4	592.9
50°	412.6	416.1	461.2	540.8	576.2
52.5°	378.7	385.4	437.9	517.6	553.3
55°	346.8	352.5	408.4	497.7	537.3
57.5°	317.8	321.1	377.9	472.7	502.6
60°	289.2	290.0	349.1	444.9	473.5
62.5°	256.4	257.8	319.5	412.1	450.4
65°	219.5	226.5	287.7	380.8	415.3
67.5°	185.1	197.2	255.2	352.0	370.1
70°	148.3	168.8	223.4	318.2	331.0
72.5°	114.5	138.6	190.8	280.4	298.4
75°	83.0	110.0	160.4	246.5	262.0
77.5°	55.9	83.4	132.0	209.0	229.6
80°	33.4	60.9	106.6	174.3	197.4
82.5°	17.1	40.9	82.7	146.2	166.9
85°	7.4	25.8	62.5	121.3	139.3
87.5°	2.1	14.7	46.0	98.1	113.2
90°	0.2	7.8	32.8	76.9	90.6
92.5°	0.2	3.7	23.1	58.2	68.7
95°	0.2	1.9	14.4	42.2	51.5
97.5°	0.2	1.1	8.7	29.9	37.8
100°	0.2	1.0	5.2	19.9	27.0
102.5°	0.2	1.1	3.6	12.6	17.6
105°	0.2	1.1	2.9	8.2	11.6
107.5°	0.3	1.1	2.6	6.1	8.1
110°	0.2	1.0	2.7	4.7	6.3

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CATALOG NUMBER: HVL8-2-LD4-1HI-40-UNV-C-EDD

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
112.5°	0.3	0.8	2.6	3.9	4.7
115°	0.2	0.6	2.3	3.7	3.9
117.5°	0.3	0.5	1.8	3.7	3.9
120°	0.3	0.3	1.5	3.6	4.0
122.5°	0.3	0.3	1.1	3.2	3.9
125°	0.2	0.3	1.0	2.4	3.4
127.5°	0.3	0.3	0.8	1.9	2.6
130°	0.3	0.3	0.6	1.5	1.9
132.5°	0.3	0.3	0.5	1.1	1.5
135°	0.3	0.3	0.3	0.8	1.1
137.5°	0.0	0.0	0.0	0.0	0.0
140°	0.0	0.0	0.0	0.0	0.0
142.5°	0.0	0.0	0.0	0.0	0.0
145°	0.0	0.0	0.0	0.0	0.0
147.5°	0.0	0.0	0.0	0.0	0.0
150°	0.0	0.0	0.0	0.0	0.0
152.5°	0.0	0.0	0.0	0.0	0.0
155°	0.0	0.0	0.0	0.0	0.0
157.5°	0.0	0.0	0.0	0.0	0.0
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)